USSR

MUZLOV, D. P. and TARAN, Yu. A., Priborostroyeniye, No 2, 1972, pp 77-79

of their formula for finding the mathematical expectation of error in the gyrocompass, the authors use the "Amur" type of gyrocompass under orbital motion of the center of gravity of a ship in a swell. They are associated with the Ryazan Radio Engineering Institute.

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USSR

UDC: 531.383

MUZLOV, D. P. and FEDOROV, V. P.

"Behavioral Peculiarities of a Combination Hydrostatic Gyrocompass Suspension Under Vibration Conditions"

Leningrad, Priborostroyeniye, No 5, 1972, pp 68-72

Abstract: Errors in the "Amur" type of gyrocompass on a mobile base are functions of the suspension system's dynamic properties. An element in the system is the mercury cushion maintaining the gyrosphere inside the follow-up sphere. This paper offers the results of an investigation of the motion of the cushion under single-direction horizontal vibrations, where experimentation showed marked nonlinearities in the cushion's motion in the fundamental resonance region. An analysis is given of the cushion's behavior by a method based on the introduction of nonlinearities into the conditions of the motion of a fluid mechanical analog rather than the conditions of the hydrodynamic problem; the mechanical analog of a solid spherical segment is chosen. The equations of motion of the segment are stated and solutions for them are found. It is shown that in the region of fundamental resonance, oscillations of the cushion may develop in the plane perpendicular to that of the

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USSR

MUZLOV, D. P. and FEDOROV, V. P., Priborostroyeniye, No 5, 1972, pp 68-72

disturbance, and that such oscillations may result in azimuth errors of the "Amur." The authors are associated with the Ryazan Polytechnical Institute.

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MUZLOV, D.P.

Gyroscopes

55435
JPRS
04 May 1972

USSR

UDC 531.383

INFLUENCE OF THE MERCURY CUSHION IN THE CONTAINED HYDROSTATIC SUPPORT ON GYROCOMPASS ACCURACY UNDER IRREGULAR ROLLING CONDITIONS

(Grossmass)

[Article by D. P. Muzlov and Yu. A. Turaev, Leningrad, Priborostroyeniye, Russian, Vol 15, No 2, 1972, pp 77-79]

Effect of the mercury cushion of a gyrocompass (GC) of the "Anschutz" type on the accuracy of its indications upon random rolling of its base is examined. It is shown that incomplete mutual correlation of the mercury cushion perturbations during rolling causes the appearance of a supplementary compass error.

The question of the hydrostatic support effect on the behavior of gyro devices is examined in a number of publications [1], [2], [3]. Thus it is shown in [3] that a hydrostatic support practically does not introduce any errors in the GC indications. GC's analogous in construction and parameters but with combined hydrostatic supports (a liquid support with centering coils and mercury cushion) have less accuracy. This permits the assumption that the contact between the surface of the sensor (S) and the mercury cushion is one of the reasons for the appearance of a supplementary error in a GC with a combined hydrostatic support.

In order to examine the dynamics of the mercury cushion, we shall make use of the results of [4], where it was shown analytically that with a small depth of heavy liquid oscillating in a spherical cavity, its sufficiently good mechanical analog is a rigid spherical pendulum. Experimental investigations also confirmed the legitimacy of such a substitution in the frequency range from zero to the natural frequency of oscillations of the mercury cushion, approximately equal to 10 sec^{-1}. Proposing in the following to limit ourselves to the investigation of small oscillations of the mercury cushion

USSR

MUZRABEKOV, Sh. M., NADZHIMUTDINOV, K. N., and KAMILOV, I. K., Tashkent Medical Institute

"Effect of Tetramethylthiuram Disulfide (TMTD) on the Action of Some Drugs"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 11, 1972, pp 8-11

Abstract: TMTD, a pesticide used to treat cotton seeds, grains, etc., was found to potentiate the effect of the hypnotic hexobarbital and that of the convulsant pentylenetetrazol in rats. TMTD injected intraperitoneally at doses ranging from 1/20 to 13 LD_{50} after the administration of hexobarbital increased the duration of the animals' sleep by 65%. At the larger dose the effect persisted 5 days. At doses of 150 and 120 LD_{50} TMTD injected intraperitoneally into rats given pentylenetetrazol intensified the convulsions by 25 and 75%, respectively. Prolonged injection of low doses of the pesticide had a wavelike effect, the peak occurring after the first month. Both hexobarbital and pentylenetetrazol are known to be metabolized in the liver. The intensification of their effects under the influence of TMTD is attributed to the inhibitory action of the pesticide on microsome metabolism in the liver.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS OF HOMOGENEOUS BUTADIENE POLYMERIZATION CATALYZED BY TITANIUM CHLORIDE IODIDE,TRIISOBUTYLALUMINUM -U-

AUTHOR-(04)-BRESLER, L.S., GRECHANOVSKIY, V.A., MUZSAY, A., PODDUBNYI, I.YA.

COUNTRY OF INFO--USSR

SOURCE--MAKROMOL. CHEM. 1970, 133, 111-18

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CHEMICAL REACTION KINETICS, BUTADIENE, MOLECULAR WEIGHT, IODINE, ORGANOALUMINUM COMPOUND, TITANIUM CHLORIDE, POLYMERIZATION CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1615 STEP NO--SZ/0000/70/133/000/0111/0118

CIRC ACCESSION NO--AP0112609

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF HOMOGENEOUS BUTADIENE POLYMN. INITIATED BY TII SUB2 CL SUB2 ISO;BU SUB3 AL WAS STUDIED AT CONST. MONOMER CONCN. A REACTION MECHANISM INVOLVING FAST INITIATION AND PROPAGATION OF LIVING CHAINS WITH REVERSIBLE DEACTIVATION OF THE ACTIVE SITES WAS PROPOSED. THE NO. AND WE. AV. MOL. WTS. OF THE POLYMER AT ANY MOMENT AFTER ESTABLISHING THE DEACTIVATION REACTIVATION EQUIL. WERE CALCD. FACILITY: SYN. RUBBER RES. INST., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.311.1.16.072.85

MUZYCHENKO, A. D.

"Balanced Operating Conditions of Star-Connected Resistances Connected to an Asymmetrical Multiphase Voltage System"

V sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 24, Kiev, Naukova Dumka Press, 1970, pp 75-78 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye241)

Translation: The problem of balancing the operating conditions of the asymmetrical feed network arises when studying balancing and stabilizing devices. In such devices, the chokes and capacitor banks are star-connected with a single-phase load. Expressions are presented for special cases of feeding the three-prong star from an asymmetrical three-phase voltage system. There are 5 illustrations and a 6-entry bibliography. [Institute of Electrodynamics of the Ukrainian SSR Academy of Sciences, Kiev]

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USSR

UDC: 621.357.7

BOGOSLOVSKIY, V. V., TYUTINA, K. M., MUZYCHENKO, L. A., KUDRYAVTSEV, N. T.

"Optimization of the Process of Electrodeposition of Nickel-Antimony Alloy"

Moscow, Zashchita Metallov, Vol 9, No 3, Jul-Aug 73, pp 455-456.

Abstract: An experimental-statistical method is used to construct a mathematical model of the process of electrodeposition of shiney nickel-antimony alloy deposits with minimum internal stress. The optimization parameters selected were the diffuse-scattered light intensity and the internal stresses in the alloy, expressed in ocular microscope divisions. The experimental data, following statistical checking, were used to produce two equations to calculate the conditions of deposition of the nickel-antimony deposits with minimum internal stresses: $NiCl_2 \cdot 6H_2O$ 59 g/l; SbF_3 3 g/l; NH_4Cl 21 g/l; NH_4F 41 g/l; D_c = 0.5-6 a/dm^2; pH 4.5; temperature 70°; antimony anodes.

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USSR

UDC 771.537.61

PRUSS, P. Kh., Candidate of Sciences, MATSIYEVICH, L. V., IVANOV, A. M., MODEL', N. M., MEZYCHENKOV, M. S., and SKACHKOVA, Ye. V.

"The Interference Resolvometer 'LIR-1'"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 9, Sep 72, pp 30-34

Abstract: The technical characteristics, operating principle, and design of the first industrial sample of a displayed automatic device, the laser interference resolvometer LIR-1, are described by reference to its optical schema and photographs of the control desk and principal blocks. The resolvometer was developed according to the technical assignment of the State Optical Institute by the Krasnogorsk Mechanical Plant for the determination of resolutions of photographic materials in the 440--2960 mm^{-1} range. A laser of the LG-36A type (λ =6328 Å) is used as light source. The LIR-1 is a two-beam interferometer in which interference bands with sinusoidal distribution of brightness develop by interaction of two flat waves. It is designed for operation under laboratory conditions. Visual or diffraction methods can be used for the evaluation of exposed and processed resolvograms. Tests of a series of high-resolution photofilms yielded a value of the resolving ability which can be characterized as $R > 2700\ mm^{-1}$, because all frequency groups up to the limiting, were reproduced. Values of R for high-resolution films are presented. Four illustr., one table, twelve biblio. refs.

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USSR UDC 619:616-093

MUZYCHIN, S. I.

"Toxigenic Properties of Cl. perfringens Type A Variant in Mixed Cultures with E. Coli."

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 4, 1970, pp 118-121

Abstract: Studies of enterotoxemia of calves, showed that in most cases E. coli is isolated along with Cl. perfringens, type A. Therefore, the effect of different strains of E. coli on the toxigenic properties and growth of Cl. perfringens type A was investigated. Cl. perfringens and E. coli strains obtained from calves sick or dying from enterotoxemia were used in the study, along with type seropathogenic strains of E. coli kept in the division museum. In investigating the effect of E. coli and its vital products on growth and toxin formation of Cl. perfringens in vitro and in mice, these results were obtained. The seropathogenic E. coli strains used in the experiments (No 055, 026, 09, and the local unstandardized strain No 117 and their vital products had no substantial effect on the growth and toxin formation of Cl. perfringens type A. Study of the effecy on rabbits of Cl. perfringens type A toxin obtained in cultures grown together with E.

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USSR

MUZYCHIN, S. I., Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 4, 1970, pp 118-121

coli also revealed data confirming the conclusion that E. coli strains used in the experiment have no effect on the toxigenic properties of Cl. perfringens type A.

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USSR

KORSUNSKIY, M. I.; GENKIN, Ya. Ye.; MUZYCHUK, R. V.

"Multiple Character of the Spectra of the Characteristic Electron Energy Loss in Transition Metals of the Yttrium-Palladium Series"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR: Seriya Fiziko-Matematicheskaya; November-December, 1972; pp 6-13

ABSTRACT: The shapes of the spectra of the characteristic electron energy losses during reflection from large samples of metals of the yttrium-palladium series were determined. The calculations were made on the assumption that the most probable types of characteristic electron energy loss in the kilovolt range are one type of energy loss by surface excitation and three by internal excitation. The parameters of the first inelastic peaks of all four types of characteristic electron energy loss for which the calculated spectra agree satisfactorily with the experimental ones were determined.

The energy losses at the surface of a sample are related to the excitation of surface plasmons. The first and second types of internal losses are related to the excitations of the plasma of the collective electrons and collective excitations of the locally bound electrons respectively. The question of the authenticity and nature of the third type of internal loss is discussed.

The article includes two figures and two tables. There are 16 references.

USSR UDC: 681.3

MUZYCHUK, V. T., YAREMENKO, V. V.

"Circuit Realization of Operators in the Specialized Language TEKHNOL"

V sb. Sredstva tekhn. kibernet. (Facilities of Technical Cybernetics--collection of works), Kiev, "Tekhnika", 1970, pp 3-13 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V547)

Translation: The authors consider the operations in a machine language for a special computer designed to solve problems of technological design. Taking the example of tabular operations as a basis, the authors consider the problem of structural realization of the operations through the method of formal synthesis of an automaton according to a microprogram. On the basis of the resultant microprogram, the functions of the outputs and the functions of the excitation are determined and used in designing the functional circuit of the automaton. V. Mikheyev.

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USSR UDC: 681.3.06:51

MUZYCHUK, V. T.

"On the Problem of Programming Automation in Automated Technological Design"

V sb. Sredstva tekhn. kibernet. (Facilities of Technical Cybernetics--collection of works), Kiev, "Tekhnika", 1970, pp 26-30 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V587)

Translation: The author considers possible methods of translation from the specialized language TEKHNOL. The method of indirect translation using the TA-2 translator is selected as economically advantageous, and also from the standpoint of enabling rapid introduction of this newly developed specialized algorithmic language. The fundamental operators of the TEKHNOL language are described as procedures in the translator input language. V. Mikheyev.

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USSR UDC 621.396.62.089.52

FAL'KOVICH, S. Ye., MUZYKA, Z. N.

"Sensitivity of Radio Receivers with Transistorized Amplifiers"

Chuvsvitel'nost' radiopriyemnykh ustroystv s tranzistornymi usilitelyami (cf. English above), "Energiya", 1970, 127 pp, ill. 35 k. (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D1 K)

Translation: Sources of noise in a transistor are considered and its equivalent noise circuit is constructed. Computational expressions are derived for determining the noise coefficient for various methods of transistor connection, and the noise coefficient is studied as a function of frequency, internal feedback and matching conditions. Computational examples are given as well as graphs of the noise coefficient as a function of the various parameters, and also the parameters of some high-frequency transistors as a function of frequency and operating conditions.

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USSR

UDC 616.5-003.6.05-085.849.19-091

VISHNEVSKIY, A. A., Jr., KHARITON, A. S., MUZYKANT, L. I., and SHERPUTOVSKAYA, K. Ye., Moscow, Department of Pathological Anatomy and Department of Pulmonary Surgery, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR

"Morphological Changes in the Skin After Irradiation With a Pulsed Laser to Remove Tattooing"

Moscow, Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

Abstract: A pulsed neodymium laser (wave length 1.06 A and energy density 80-120 j/cm^2) was used to remove tattoos in 113 persons aged 18 to 60. The irradiated skin was covered with a boric ointment dressing until the pigmented tissue was completely lysed and rejected (5-20 days) and then with Vishnevskiy's ointment dressing to promote granulation (3-5 days). The final healing took place under the naturally formed scab. Biopsy samples of pigmented with adjacent normal skin were taken prior to and at various periods up to 60 days after irradiation. Morphological and histochemical examinations of the samples revealed a mild inflammatory reaction, frequent absence of demarcation boundaries, infiltration by lymphocytes and hystiocytes, and a moderate development of granulation tissue. Epithelialization proceeded mainly from the edges of the wound, with new epithelial cells containing large glycogen granules and a

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VISHNEVSKIY, A. A. Jr., et al., Arkhiv Patologii, Vol 35, No 4, 1973, pp 59-63

considerable amount of mucopolysaccharides. In 3-4 weeks, the wound was healed completely (approximately the same period as with clean surgical wounds), and fine, smooth, pink, mobile scar tissue of the contour of the tattoo was formed. The underlying young connective tissue was rich in acid mucopolysaccharides but contained no elastic fibers. In 1 year, the scar became quite unnoticeable.

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 027

TITLE--HYPOTHALAMUS HYPOPHYSIS ADRENAL SYSTEMS IN BURN SHOCK, LITERATURE SURVEY -U-

AUTHOR-(02)-MUZYKANT, L.I., GORDEYEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--EKSP KHIR ANESTEZIOL 14(4): 42-47

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BURN COMPLICATION, TRAUMATIC SHOCK, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605007/E09 STEP NO--UR/0481/69/014/004/0042/0047

CIRC ACCESSION NO--AP0139909

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 027

CIRC ACCESSION NO--AP0139909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN RECENT YEARS A NEUROGENIC THEORY OF SHOCK IN BURN CASES, WHICH REGARDS BURNS AS INVOLVING A COMPLEX NEURODYSTROPHIC PROCESS INITIATED BY OVERACTIVITY OF THE NERVOUS SYSTEM, HAS RECEIVED MUCH ATTENTION. THE DEVELOPMENT OF BURN SHOCK IS ACCOMPANIED BY BIPHASIC CHANGES IN THE CNS CHARACTERIZED AS A 1ST STAGE OF EXCITATION (ERECTILE PHASE) AND A SUBSEQUENT INHIBITION (TORPID PHASE) STAGE OF THE NERVOUS SYSTEM. THE CHANGES IN THE NERVOUS SYSTEM ARE HIGHLY STRESSFUL FOR THE ORGANISM AND INVOLVE AN ADAPTIVE REACTION ON THE PART OF THE ORGANISM ON THE BASIS OF THE HYPOPHYSIS ADRENAL CORTEX SYSTEM. HISTOLOGICAL STUDIES CONDUCTED ON PATIENTS DYING IN A STATE OF BURN SHOCK REVEALED DYSTROPHIC CHANGES IN THE HYPOTHALAMUS AND INCREASED NEUROSECRETORY ADTIVITY ON THE PART OF THE SUPRAOPTIC AND THE PARAVENTRICULAR NUCLEI. ALTHOUGH IT IS AS YET UNDECIDED WHICH CELLS OF THE ANTERIOR PITUITARY ARE RESPONSIBLE FOR ACTH SECRETION, EXPERIMENTS CONDUCTED WITH RATS SUBJECTED TO THERMAL SHOCK HAVE SHOWN THAT THE LEVELS OF ACTH IN THE PITUITARY OF SUCH ANIMALS ARE ELEVATED. THE ROLE OF ACTH IN THE STIMULATION OF THE ADRENAL CORTEX IS WELL KNOWN, AS IS THE POSITIVE ACTIVITY OF THE LATTER IN STRESSFUL SITUATIONS. EXPERIMENTALLY, BOTH THE GLUCOCORTICOIDS AND ACTH ARE USEFUL IN THE TREATMENT OF BURNS: CLINICAL RESULTS OF SUCH THERAPY ARE CONTROVERSIAL.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 022

TITLE--MORPHOLOGICAL CHANGES OF THE ADRENALS IN EXPERIMENTAL BURNS -U-

AUTHOR-(04)-MUZYKANT, L.I., KEROVA, A.N., GORDEYEV, V.F., KUTSIDI, YE.V.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 113-116

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THERMAL BURN, RABBIT, ADRENAL CORTEX, HYPERPLASIA, URINE, CORTICOSTEROID, EXCRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0219/70/049/006/0113/0116

PROXY REEL/FRAME--3004/0575

CIRC ACCESSION NO--AP0131198

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 022

CIRC ACCESSION NO--AP0131198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SEVERE BURN CAUSING IN RABBITS A STATE OF SHOCK DURING THE FIRST 24 HOURS NO CHANGES IN THE STRUCTURE OF THE ADRENALS WERE OBSERVED. 48-72 HOURS AFTER THE INFLICTION OF BURN THERE WERE FOUND HYPERPLASTIC PROCESSES IN THE ADRENAL CORTEX, THIS APPARENTLY TESTIFYING TO ITS INCREASED FUNCTION. THE AUTHORS REVEALED A REDUCED URINARY CONTENT OF 17-OXYCORTICOSTEROIDS ON THE FIRST DAY AND IN THE INSTANCE OF ANURIA, ON THE SECOND-THIRD DAY AFTER THE INFLICTION OF BURN. ON THE SECOND DAY, AND IN ANURIA, ON THE THIRD FOURTH DAY AFTER BURN, THE LEVEL OF 17-OXYCORTICOSTEROIDS REVERTED TO THE NORMAL VALUE.

FACILITY: A. V. VISHNEVSKIY INSTITUTE OF SURGERY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE OXIDATION OF POTASSIUM HEXACHLOROIRIDATE (III) WITH PERIODIC ACID -U-

AUTHOR--MUZYKANTOVA, Z.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKSDEMII NAUK SSSR, NO 2 SERIYA KHIMICHESKIKH NAUK, 1970, NR 1, PP 45-51

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRIDIUM COMPOUND, CHLORIDE, PERCHLORATE, CHEMICAL REACTION RATE, ACTIVATION ENERGY, POTASSIUM COMPOUND, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1608 STEP NO--UR/0289/70/000/001/0045/0051

CIRC ACCESSION NO--AP0100210 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 027

CIRC ACCESSION NO--AP0100218

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE REACTION (IRCL SUB6) PRIME3NEGATIVE PLUS H SUB5 IO SUB6 PLUS H PLUS YIELDS (IRCL SUB6) PRIME2NEGATIVE PLUS IO SUB3 PLUS 3H SUB2 O HAS BEEN STUDIED IN AQUEOUS PERCHLORATE SOLUTIONS WITHIN THE TEMPERATURE RANGE 20-35DEGREESC. THE REACTION RATE DEPENDS ON THE CONCENTRATIONS OF H SUB5 IO SUB6, CL MINUS AND H PLUS IONS. THE RESULTS SUGGEST THAT H SUB5 IO SUB6 REACTS WITH FREE CHLORIDE IONS TO FORM CHLORINE THAT RAPIDLY CONVERTS (IRCL SUB6) PRIME3NEGATIVE TO (IRCL SUB6) PRIME2NEGATIVE. THE ACTIVATION ENERGY AND LOGARITHM OF PRE EXPONENTIAL FACTOR IN THE ARRHENIUS EQUATION ARE ABOUT 18,5 PLUS OR MINUS L,O KCAL-MOL AND 12,1 PLUS OR MINUS 0,8, RESPECTIVELY.

UNCLASSIFIED

UDC 530.145:535.354

USSR

MUZYLEV, YE. L., Moscow State University

"Radiation of an Atom Caused by a Fast-Moving Charged Particle"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Vol 7, No 1, 1972, pp 11-17

Abstract: The article considers the question of the radiation of a single atom induced by a fast charged particle for the purpose of estimating the dependence of the frequency shift $\Delta\omega = \omega - \omega_0$ on the velocity of the passing particle. The Furry representation is used to describe the process considered, with the electromagnetic field of the particle given by the classical potentials of a uniformly moving charge and the interaction with radiation described within the framework of quantum electrodynamics. The level shifts are calculated according to perturbation theory. Time integrals are calculated approximately as a function of effective interaction time. The results indicate the presence of level shifts during forced transitions and the approximate dependence of these shifts on the velocity of the charged particle. Shifts calculated for velocities close to the velocity of light

USSR

MUZYLEV, YE. L., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 7, No 1, 1972, pp 11-17

have the same order (maximum an order of magnitude less) as the Lamb shift. This indicates that it is possible in principle to use the spectroscopic method to determine the energy of fast-moving charged particles from the frequency shifts of stimulated radiation, if the velocity of the particle is not very close to the velocity of light.

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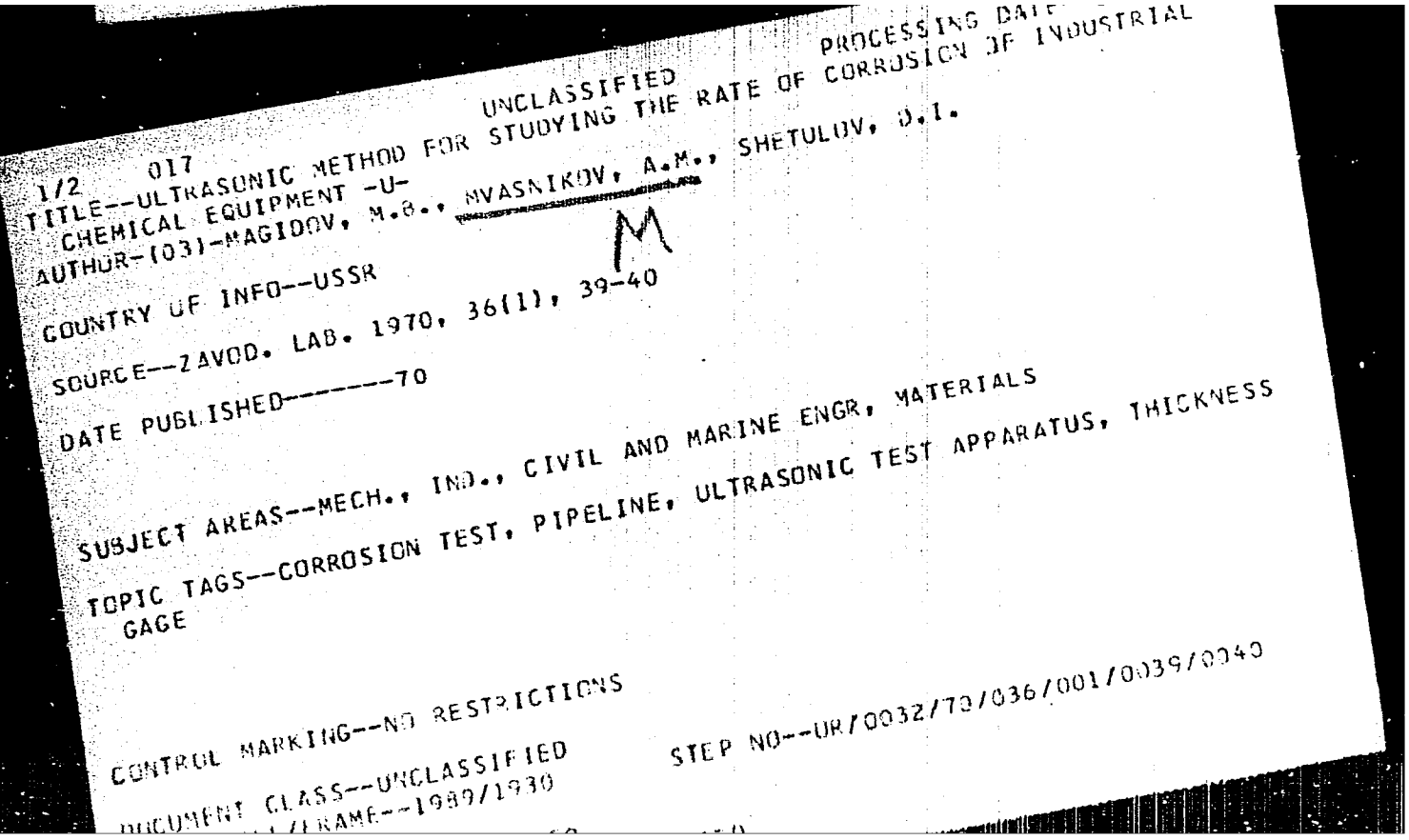

UNCLASSIFIED PROCESSING DATE

1/2 017

TITLE--ULTRASONIC METHOD FOR STUDYING THE RATE OF CORROSION OF INDUSTRIAL CHEMICAL EQUIPMENT -U-

AUTHOR-(03)-MAGIDOV, M.S., NVASNIKOV, A.M., SHETULOV, D.I.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 39-40

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--CORROSION TEST, PIPELINE, ULTRASONIC TEST APPARATUS, THICKNESS GAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0032/70/036/001/0039/0040

PROXY FRAME--1989/1930

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 017
CIRC ACCESSION NO--AP0108259
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TYPE UDM-1M ULTRASONIC TRANSDUCER, FITTED WITH A REMOTE SENSING PROBE, WAS SUED TO MEASURE THE WALL THICKNESS OF A PIPELINE OF DIAM., D, AND WALL THICKNESS, DELTA, AT A FREQUENCY OF 5 MHZ. WITH D EQUALS 35-216 MM. AND DELTA EQUALS 3-15 MM, THE MEASUREMENT ERROR WAS PLUS OR MINUS 3PERCENT. THE AREA TO BE MEASURED WAS 1ST CLEANED BY FILING AND THEN BY USING AN EMERY CLOTH FOLLOWED BY WIPING WITH A CLOTH SATD. WITH SPINDLE OIL AS THE CONTACT FLUID. FOR THICKNESS SMALLER THAN 5 MM, THE UDM-1M GAVE RESULTS EQUAL TO THOSE OBTAINED WITH THE TUK-3 ULTRASONIC RESONANCE THICKNESS GAGE, IF BOTH INSTRUMENTS WERE CALIBRATED WITH THE SAME SAMPLE. TO MEASURE THE THICKNESS OF THE LINING IN A TOWER, THE UDM-1M WAS MODIFIED TO USE A LONGER SHIELDED CABLE TO CARRY THE SENSING PROBE. EXPTL. WORK IN THE LAB. SHOWED THAT EQUIV. RESULTS WERE OBTAINED WITH BOTH CABLE LENGTHS USED. TO KEEP THE MEASUREMENT ERROR TO A MIN., THE SYSTEM WAS FREQUENTLY CALIBRATED WITH A KNOWN SAMPLE BETWEEN DETNS. TEMP. VARIATION HAD THE GREATEST EFFECT ON THE RESULTS FOR ALL THE PARAMETERS STUDIED.

UNCLASSIFIED

UDC 539.3

USSR

KOSHELEVA, T. I., MYACHENKOV, V. I., Moscow

"Stability of Toroidal Shells Under Local Loads"

Kiev, Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 23-27

Abstract: The finite-difference method was used to obtain the solution of the problem of stability of toroidal shells under the effect of local loads: a concentrated annular force uniformly distributed with respect to the large circumference of the torus, an edge moment uniformly distributed with respect to the large circumference, a shell heated to a temperature and fastened by a quite rigid "cold" frame. The subcritical state is determined from the solution of the boundary effect equation. Formulas are presented for finding the critical value of the local loads, and the effect of the subcritical distortion of the generatrix of the shell on their magnitude is investigated.

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UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 019

TITLE--STABILITY OF BLUNTED SPHERICAL SHELLS LOADED BY HYDROSTATIC EXTERNAL PRESSURE -U-

AUTHOR--GRIGORYEV, I.V., MYACHENKOV, V.I.

M

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, FEB. 1970, P. 18-21

DATE PUBLISHED----FEB70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SPHERIC SHELL STRUCTURE, HYDROSTATIC PRESSURE, ORDINARY DIFFERENTIAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0198/70/006/000/0018/0021

PROXY REEL/FRAME--1988/1324

CIRC ACCESSION NO--AP0106101 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 019
CIRC ACCESSION NO--AP0106101
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STABILITY OF BLUNTED SPHERICAL SHELLS UNDER HYDROSTATIC PRESSURE ON THE BASIS OF A NONTRIVIAL SOLUTION TO THE EQUILBRIUM EQUATIONS, WHICH SATISFIES FOUR HOMOGENEOUS BOUNDARY CONDITIONS AT EACH FACE OF THE SHELL. THE CRITICAL VALUE OF THE EXTERNAL PRESSURE IS OBTAINED BY REDUCING THE EQUILIBRIUM EQUATIONS AND THE BOUNDARY CONDITIONS TO A SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS WHICH ARE SOLVED BY A FINITE DIFFERENCE TECHNIQUE. A FORMULA FOR THE CRITICAL EXTERNAL PRESSURE IS PROPOSED, AND THE INFLUENCE OF THE BOUNDARY CONDITIONS ON ITS CRITICAL VALUE IS ASSESSED.

UNCLASSIFIED

Acc. Nr: AP0046170 Abstracting Service: 5170 Ref. Code: INTERNAT. AEROSPACE ABST. UR0198

M

A70-23287 # Stability of cylindrical shells under the action of axisymmetric transverse pressure (Ustoichivost' tsilindricheskikh obolochek pri deistvii osesimmetrichnogo poperechnogo davleniia). V. I. Mossichenkov. *Prikladnaia Mekhanika*, vol. 6, Jan. 1970, p. 27-33. 23 refs. In Russian.

Analysis of the results of a solution to the stability problem of an elastic isotropic circular cylindrical shell subjected to uniform pressure and to pressure varying along the generating line. The critical transverse load is calculated with the aid of a computer program in which the neutral equilibrium equations and the boundary conditions are reduced to a system of ordinary differential equations, which is solved by a finite-difference technique. The influence of the end boundary conditions and moments of the subcritical state on the critical load is examined. V.P.

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REEL/FRAME 19781247

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UDC: 681.326.3

MYACHEV, A. A., SHUVALOV, L. G.

"A Converter for Coupling a Device for Control of External Objects to a Channel"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 292158, Division G, filed 27 Aug 69, published 6 Jan 71, p 131

Translation: This Author's Certificate introduces a converter for coupling a device for controlling external objects to a channel. The converter contains a control unit, a command register, data register, "subscriber information" flip-flop, a diode for setting and resetting the "subscriber information" flip-flop, and a delay circuit. As a distinguishing feature of the patent, the throughput capacity and flexibility of the system are increased by adding an operation code decoder, an accelerated operating mode flip-flop, a duplex operating mode flip-flop, a second data register, a second delay circuit, diodes, merging circuits for shaping the "subscriber information" signal. The input of the decoder is connected to the output of the command register, and the outputs of the decoder are connected respectively to the inputs of the accelerated mode flip-flop and the duplex mode flip-flop. The output of the duplex mode flip-flop is connected to the input of the control

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MYACHEV, A. A., SHUVALOV, L. G., USSR Author's Certificate No 292158

unit and the input of the first merging circuit. The output of this merging circuit is connected through the diode for setting the "subscriber information" flip-flop to the first delay circuit. The output of the accelerated mode flip-flop is connected to the input of the control unit and the diodes for resetting the "subscriber information" flip-flop. The outputs of these diodes are connected thorugh the second merging circuit to the "subscriber information" flip-flop. The output of the first delay circuit is connected to the first diode for resetting the "subscriber information" flip-flop. The first and second data registers are connected to the control unit and to the information lines.

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UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 019

TITLE--SCATTERING OF 14.2-MEV NEUTRONS ON MAGNESIUM -U-

AUTHOR-(02)-NEFEDOV, V.V., HYACHKOVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 179-81

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NEUTRON SCATTERING, FAST NEUTRON, NEUTRON ENERGY DISTRIBUTION, DIFFERENTIAL CROSS SECTION, AGNESIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

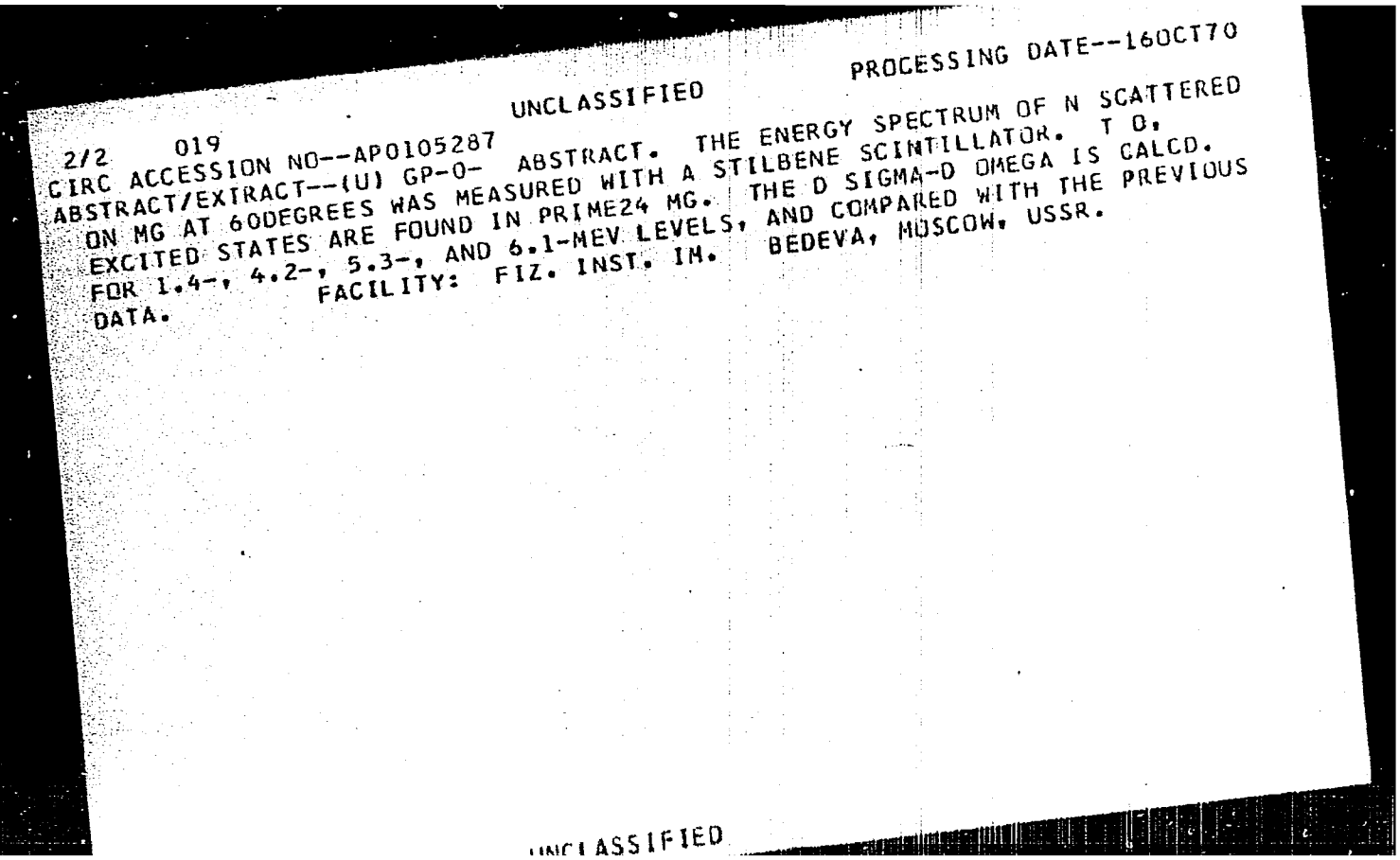
DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0048/70/034/001/0179/0181

PROXY REEL/FRAME--1988/0211

CIRC ACCESSION NO--AP0105287

UNCLASSIFIED



2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0105287
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY SPECTRUM OF N SCATTERED ON MG AT 60DEGREES WAS MEASURED WITH A STILBENE SCINTILLATOR. T O, EXCITED STATES ARE FOUND IN PRIME24 MG. THE D SIGMA-D OMEGA IS CALCD. FOR 1.4-, 4.2-, 5.3-, AND 6.1-MEV LEVELS, AND COMPARED WITH THE PREVIOUS DATA.
FACILITY: FIZ. INST. IM. BEDEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHABRAMISHVILI, K. Z., SHUKEYLO, I. A., BOYKO, S. N., KONAR, YE. G., MALYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'-MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radioelectronic systems for acceleration process control and generation of

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USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

4/4

Acc. Nr. #0038580 Abstracting Service: CHEMICAL ABST. 70 Ref. Code UK0000

M

67370a **Preparative fractionation of copolymers of acrylamide with sodium maleate.** Myagchenkov, V. A.; Kurenkov, V. F.; Kuznetsov, E. V.; Frenkel', S. Ya. (S. M. Kirov Chem.-Technol. Inst., Kazan, USSR). *Eur. Polym. J.* 1970, 6(1), 63-8 (Eng). Compn. distribution curves were obtained for 4 acrylamide-Na maleate copolymers. Efficient compn. fractionation was obtained partially because of the presence of the ionic groups in the copolymer macromols. The compn. distribution curves obtained under non-isoionic conditions and in a system contg. 15% NaCl indicated that the copolymn. under non-isoionic conditions is anomalous. The addn. of NaCl stabilizes the relative reactivities of the comonomers. RCDL

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REEL/FRAME
19731759

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SOME PECULIARITIES IN INSOLUBLE COLLAGEN CONTENT OF RAT LUNGS IN NORMAL ANIMAL AND AT EXPERIMENTAL SILICOSIS -U-

AUTHOR-(02)-VASILYEVA, G.N., MYAGKAYA, G.L.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 286-289

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COLLAGEN, LUNG, PULMONARY DISEASE, SILICA, CHEMICAL ANALYSIS, AMINO ACID, CARBOHYDRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0148 STEP NO--UR/0301/70/016/003/0286/0289

CIRC ACCESSION NO--AP0120848

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 023

CIRC ACCESSION NO--AP0120848

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA ARE PRESENTED ON STUDY OF INSOLUBLE COLLAGEN OBTAINED FROM LUNG TISSUE OF HEALTHY RATS AND FROM THOSE WITH EXPERIMENTAL SILICOSIS. THE CONTENT OF SOME AMINO ACID (HYDROXYPROLINE, PROLINE, TYROSINE) AND CARBOHYDRATES (URONIC ACID AND HEXOSES) IN INSOLUBLE COLLAGEN WAS DETERMINED. IT WAS ESTABLISHED THAT LUNG COLLAGEN OF HEALTHY RATS AS WELL AS THOSE WITH EXPERIMENTAL SILICOSIS DOES NOT DIFFER FROM COLLAGEN IN OTHER TISSUES, BUT HAS THE LESS PROLINE CONTENT AS COMPARED TO THE COLLAGEN IN OTHER TISSUES OF DIFFERENT ANIMALS. THE CHARACTERISTIC FEATURE OF INSOLUBLE LUNG COLLAGEN OF RATS IS THE HIGH HEXOSES CONTENT (AT AVERAGE 2,5PERCENT). HEXOSES CONTENT IN INSOLUBLE LUNG COLLAGEN AT LATER PERIODS OF SILICOSIS DEVELOPMENT WAS DIMINISHED. FACILITY: INSTITUTE OF LABOUR HYGIENE AND PROFESSIONAL DISEASES USSR ACADEMY OF MEDICAL SCIENCES, INSTITUTE OF RHEUMATISM USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED

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USSR UDC 616.24-003.66-092.9-008.939.629

VASIL'YEVA, G. N. and MYAGKAYA, G. L., Institute of Industrial Hygiene and Occupational Diseases, Academy of Sciences USSR

"Some Characteristics of Insoluble Collagen in the Lungs of Healthy and Silicotic Rats"

Moscow, Voprosy Meditsinskoy Khimii, No 3, 1970, pp 286-289

Abstract: Experiments on rats showed that the dry weight of the lungs in the early stages (1 month) of silicosis was higher than in healthy animals, and that it was three times higher after 13 months. However, the insoluble residue of lung tissue obtained by exhaustive extraction of soluble proteins from lung homogenates was normal. The amount of hydroxyproline, tyrosine, and proline in insoluble lung collagen was the same in both control and experimental animals. A distinguishing feature of insoluble collagen in rat lung is the high hexose content, but it decreased somewhat in the later stages of silicosis (6-1/2 months) to 2.2% (from an original 2.5%).

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USSR

UDC 547.341.07

KAABAK, L. V., VARSHAVSKIY, S. L., MYAGKAYA, M. YE., KOSHECHKINA, L. A., KALITINA, M. I., and KABACHNIK, M. I.

"Process for the Preparation of Tri-Secondary-Alkylphosphine Oxide"

USSR Author's Certificate No 362024. Filed 18 Jan 71, published 13 Dec 71 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, 1873, p 54)

Translation: This process is improved in that white phosphorous reacts with secondary halide alkyls and magnesium or zinc while being heated, with the subsequent treatment of the reaction mixture with alkali. The desired product can be separated by known methods.

2. The process in number 1 is improved in that the mixture is heated to a temperature of 120-210°C.

3. The processes described in number 1 and 2 are improved in that the treatment of the reaction mixture with alkali is carried out at 270°C.

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USSR UDC 577.4

MARASANOV, V. V., MARASANOVA, T. F., and MYAGKAYA, V. N.

"Mathematical Models of the Differential Diagnosis of Diseases"

Matematicheskiye modeli differentsial'noy diagnostiki zabolevaniy (cf. English above), Kishinev, "Shtiintsa," 1973, 62 pp, ill., 35 k. (from RZh-Matematika, No 6, Jun 73, Abstract No 6V733)

Translation: The book considers questions of algorithmizing the process of making a medical diagnosis, using the example of the early differential diagnosis of influenza and a group of influenza-like diseases, as well as models of symptom and syndrome diagnosis and models which take into consideration the interrelationship between control systems in the organism. The proposed mathematical diagnosis-making models were checked with the use of a digital computer on a large group of patients. The algorithms and the results of the check are given.

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USSR

MARASANOV, V. V., MARASANOV, T. F., MYAGKAYA, V. N.

"Mathematical Models for Differential Diagnosis of Diseases"

Matematicheskiye Modely Differentsial'noy Diagnostiki Zabolevaniy [English Version Above], Kishilev, Shtiintsa Press, 1973, 62 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V733K).

Translation: Problems of algorithmization of the process of medical diagnosis are studied on the example of early differential diagnosis of influenza and the group of influenza-like accompanying diseases, as well as a model of symptomatic and syndrome diagnosis and a model considering the interrelationship of systems of regulation in the organism. The mathematical models suggested for diagnosis are tested using a digital computer on a large group of patients. Algorithms and results of their testing are presented.

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MYAGKOV, A.A.

Welding

UDC 621.791.532.375.3.037

VACUUM-DIFFUSION WELDING UNIT

[Article by Candidate of Engineering Sciences G. V. Konyushkin and engineers A. A. Myagkov and G. F. Zelenyy, Sverdlovsk Polytechnical Institute; Nauchno-Sverdlovsk Polytechnical Institute; Russian, No 12, 1972, pp 55-56]

Production of units UDS-2 and A.306.20 has been mastered for the diffusion welding of parts made of similar and dissimilar metals and alloys (steel-steel, copper-copper, steel-copper, steel-aluminum, steel-iron, steel-titanium, etc.) as well as nonmetals (copper-ceramic, kovar-glass, steel-graphite, etc.). They make it possible to produce weld joints of 400 different compositions which are identical to their initial state for all the basic characteristics (strength, ductility, thermal stability and electrical conductivity). On these units it is possible to weld parts without restriction of thickness corresponding on plane, conical, cylindrical and relief surfaces.

These units make it possible to combine the process of joining parts and assemblies with their vacuum or hydrogen annealing, vacuation of electrovacuum instruments, sintering of powders, etc.

A distinguishing feature of unit A.306.20 is the possibility of switching it to a hydrogen system which expands the technological possibilities of the unit.

Unit UDS-2 (see Fig. 1) is easier to operate than unit A.306.20. This was achieved by a more practical positioning of the control elements and panel. Productivity of the unit was increased by means of improving the system of chamber evacuation and cooling the bottom of the housing and welding chamber support.

The control apparatus and panel of the unit raise it

possible to perform smooth adjustment and regulation (control of welding temperature in automatic) of the welding mode parameters which provides the capability of welding an assembly according to specified conditions.

Inquiries may be sent to the following address: Moscow, Zh-29, Problem Laboratory of Vacuum Diffusion Welding.

Fig. 1. Overall view of UDS-2.

Technical specifications for UDS-2 and A.306.20 Units.

	UDS-2	A.306.20
Maximum dimensions of welded parts, mm:		
height	180	150
diameter	60	50
Dimensions of working vacuum chamber, mm:		
diameter	350	150
height	400	450
Productivity, parts/hour	2-3	1-2
Type of heater	Induction	
Maximum heating temperature, °C	1100	
Welding pressure, kgf	50-1000	
	1000-10000	
	10-5	
Chamber vacuum, mm Hg		VN-2KG
Type rough exhaust pump		VN-1M1
Type high vacuum pump		N-8-1M
Type high frequency generator	IO.60008.2	A.624.25
Operating frequency range, kHz	440-880	300-500
Maximum power, kV	25	60
Supply voltage (three-phase, 50 Hz), V	380/220	
Water consumption, l/min	10	40

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 023

TITLE--OPTIMIZATION OF BASIC PARAMETERS OF THERMAL DESALTING PLANTS WITH ADIABATIC EVAPORATION -U-

AUTHOR-(03)-KORNEICHEV, A.I., IZVEKOV, A.V., MYAGKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--DESALINATION; 7: 179-86(FEB 1970)

DATE PUBLISHED----FEB70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--DESALINATION, ADIABATIC PROCESS, EVAPORATION, PARAMETER, COMPUTER CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--NE/0000/70/007/000/0179/0186

PROXY REEL/FRAME--2000/2120

CIRC ACCESSION NO--AP0125704

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 023

CIRC ACCESSION NO--AP0125704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PRESENTED FOR COMPLEX OPTIMIZATION OF THE PARAMETERS OF DESALINATION PLANTS WITH ADIABATIC EVAPORATION. THE COMPUTATION OF OPTIMAL PARAMETERS OF SINGLE, AS WELL AS DUAL, PURPOSE DESALINATION PLANTS BY THE PROPOSED METHOD IS NOT COMPLICATED. THE COMPUTATIONAL PROGRAM OF THE OPTIMAL PARAMETERS IS EASILY CARRIED OUT ON ELECTRONIC COMPUTERS. FACILITY: GOVERNMENT COMMITTEE ON THE UTILIZATION OF NUCLEAR ENERGY, MOSCOW.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 016

TITLE--THE IMPORTANCE OF CONTRAST ENEMA IN INVAGINATION OF THE LARGE INTESTINE -U-

AUTHOR-(02)-MAILYAN, A.G., MYAGKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 3, PP 91-94

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LARGE INTESTINE, DIAGNOSIS, X RAY CONTRAST MEDIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1325

STEP NO--UR/0531/70/000/003/0091/0094

CIRC ACCESSION NO--AP0054209
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 016

CIRC ACCESSION NO--AP0054209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIAGNOSIS OF INVAGINATION OF THE LARGE INTESTINE DURING THE FIRST HOURS OF THE DISEASE IS VERY DIFFICULT. CONTRAST RETROGRADE INVESTIGATION OF THE LARGE INTESTINE HELPS TO SOLVE A NUMBER OF PROBLEMS WHICH INFLUENCE THE CHOICE OF THE MODE OF THERAPY. IN MOBILITY OF THE HEAD OF THE INVAGINATED INTESTINE IT IS EXPEDIENT TO ATTEMPT DISINVAGINATION DIRECTLY UNDER THE SCREEN WITH THE AID OF A CONTRAST ENEMA. IN PROPER EMPLOYMENT THE PROPOSED TECHNIQUE IS SAFE AND IT SHOULD BE WIDELY USED.

UNCLASSIFIED

Acc. Nr. AA0108180 Abstracting Service: CHEMICAL ABST. 6-70

Ref. Code UR 0482

135549t Steel. Ozerskii, A. D.; Solntsev, Yu. P.; Gulkin, M. F.; Myagkov, V. V.; Vladimirov, N. F.; Yurasov, S. A.; Nikonov, V. F.; Yakovenko, A. F.; Parfenovskii, A. B.; Kunitsa, S. S. U.S.S.R. 260,899 (Cl. C 22c), 06 Jan 1970, Appl. 02 Dec 1968; From *Otkrytiya, Izobret., Prom. Obraztsy. Tovarnye Znaki* 1970, 47(4), 81. Steel with improved mech, properties consisted of: C 0.40–0.45, Si 0.5–0.7, Mn 0.5–0.8, Cr 1.5–1.8, V 0.3–0.5, Mo 0.9–1.2, impurities of S <0.03, and P <0.03%, and Fe the remainder. MSCL

18 CK

REEL/FRAME

19891846

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 019

TITLE--PREPARATION AND STUDY OF COMPLEXES OF OSMIUM,II, WITH MOLECULAR NITROGEN -U-

AUTHOR-(03)-BORODKO, YU.G., KOZUB, G.I., MYAGKOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1153-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OSMIUM COMPOUND, COMPLEX COMPOUND, NITROGEN, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0886 STEP NO--UR/0076/70/044/005/1153/1157

CIRC ACCESSION NO--AP0137914

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137914

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMMINE COMPLEXES OF OS(II) CONTG. MOL. N IN THE INNER COORDINATION SPHERE OF OS ARE FORMED UPON THE REACTION OF HYDRAZINE HYDRATE WITH K SUB2 OSCL SUB6, OSCL SUB4, OSOHCL SUB3, AND OTHER COMPDS. OF OS IN AQ. SOLN. THE IR SPECTRA INDICATE THAT THE CATION (OSN SUB2(NH SUB3) SUB5) PRIME2 POSITIVE BELONGS TO THE C SUB4V SYMMETRY GROUP, AND THE N SUB2 MOL. IS LOCATED IN A LINEAR POSITION COMPARED TO THE OS. THE SPECTRAL FREQUENCIES OF ISOTROPIC SUBSTITUTED COMPDS., (OS PRIME15 N SUB2(PRIME15 NH SUB3) SUB5)X SUB2 AND (OSN SUB2(ND SUB3) SUB5) X SUB2, ARE GIVEN. THE VALENCE VIBRATION OF THE N:N BOND IS CHARACTERIZED BY ABSORPTION IN THE 2012-34 CM PRIME NEGATIVE1 RANGE AND THE OS,N SUB2 BOND IN THE 500-18 CM PRIME NEGATIVE1 RANGE. SPLITTING OF THE 2012 CM PRIME NEGATIVE1 BAND INTO A SERIES OF COMPONENTS IS EXPLAINED BY RESONANCE INTERACTION OF THE (OSN SUB2(NH SUB3) SUB5)X SUB2 MOL. IN THE ELEMENTARY UNIT CELL OF THE CRYSTAL.

FACILITY: FILIAL INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

MYAKINENKOV, V. I.

SO: JPRS 59279
14 June 73

OBTAINING SILICON NITRIDE LAYERS ON SILICON BY GROWTH FROM THE GAS PHASE AND THE PROPERTIES OF THESE LAYERS

AU - Semiconductor Materials

[Article by B. G. Anokhin, V. I. Myakinenkov, G. F. Lymar', Ye. V. Polikanov, Sh. Shioshvili; Novosibirsk, Protsessy Rosta i Struktura Monokristallicheskikh Sloyev Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp [illegible]]

The fine characteristics of a layer of amorphous silicon nitride can be used in semiconductor devices and integrated circuits instead of silicon dioxide SiO_2 as the passivating coating, the protective mask during diffusion and the insulating dielectric, and by comparison with SiO_2 they have the following advantages.

1. The Si_3N_4 layers (1,000 Å thick and less) are effective protection from the diffusion of such admixtures as gallium, aluminum, sodium ions and oxygen.

2. It is known that in silicon dioxide exchange electrode reactions take place in connection with the diffusion of the oxygen ions to the outer surface of the oxide and the occurrence of oxygen vacancies in the body of the SiO_2. The presence of vacancies causes migration of the O_2 ions and a large surface potential shift in the direction of the n-region, that is, the formation of a positive space charge in the SiO_2 at the $Si-SiO_2$ interface. The migration and the leakage of the ions connected with it are the cause of worsening of the passivating layers of SiO_2 and instability of operation of the MOS-transistors. Thus, according to the Sperry Rand data, the operating point of the MOS-type transistor gate can shift by 70 volts in a few hours at temperatures close to 100° C as a result of ion drift across the oxide layer under the effect of the applied voltage. In transistors of the metal-nitride-semiconductor type, no shift of the operating point was observed. These instruments differ from the analogous MOS-transistors by higher stability, low threshold voltage and higher operating voltages. There are generalizations (Bell Telephone Labs) regarding the successful sealing of the semiconductor devices using a silicon nitride layer deposited by pyrolysis of anhydrous ammonia and Si hydride on a SiO_2 layer. The Si_3N_4 coating insures a more reliable seal and permits simultaneous sealing of thousands of devices on one plate.

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USSR

UDC 621.396.677(02)

ARDAB'YEVSKIY, A. I., VOLKOV, O. A., VOSKRESENSKIY, D. I., GOSTYUKHIN, V. L., GRANOVSKAYA, R. A., GRINEVA, K. I., KRITSYN, V. A., MYAKISHEV, B. YA., FILIPPOV, V. S., CHEBYSHEV, V. V.

"Microwave Antennas and Devices. Calculation and Design of Antenna Arrays and their Radiating Elements. Textbook for Students at the Radiotechnical Specialized Institions of Higher Learning"

Antenny i ustroystva SVCh. Raschet i proyektirovaniye antennykh reshetok i ikh izluchayushchikh elementov. Uchebn. posobiye dlya stud. radiotekhn. spets. vyzov (cf. English above), Moscow, Soviet Radio, 1972, 320 pp, ill., 75 k. (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 5B32K)

Translation: Methods of calculating the basic parameters of antenna arrays with electric rocking of the radiation pattern and frequency and commutation methods of controlling the radiation pattern are discussed. A study is made of the structure of the optimal arrays with Dolf-Chebyshev distribution, the design of irised-wave guide and horn arrays and also methods of calculating the array elements: dielectric, rod, spiral, horn and director antennas.

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USSR UDC 615.616.24-003.656.6

DINKELIS, S. S., KRIKUNOV, G. N., KIRILYUS, Z. YE., KONDRASHOVA, M. YA., MYAKISHEV, I. A., POLYANSKAYA, L. A.

"Significance of the Petrographic Composition and Degree of Oxidation of Coal Dust When Evaluating It In Anthracosis Danger"

Nauch. tr. Irkutsk. med. in-t (Scientific Works of the Irkutsk Medical Institute), 1972, vyp 110, pp 39-40 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.889)

Translation: Three specimens of coal dust of defined petrographic composition and state of oxidation comprising 98-99 percent organic material and not containing SiO_2 were obtained experimentally. After intratracheal administration of these coal dust samples to rats, by the results of the histomorphologic and biochemical studies it was established that the rats developed pulmonary fibrosis. Among the trace components of the coal dust, the more expressed fibrogenic reaction was obtained for fusinite. The biological effects caused by the unoxidized coal dust (by comparison with oxidized) appeared more quickly and were most expressed during the first ten days after poisoning.

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UDC 546.791'27'11

USSR

VOLKOV, V. V., GRANKINA, Z. A., and MYAKISHEV, K. G.

"The Nature of Uranium (Tetravalent) Borohydride"

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 401-405

Abstract: Tetravalent uranium borohydride, $U(BH_4)_4$ is of interest as a member of a comparatively new class of compounds, namely the metal hydroborates noted for the presence of boron hydride ions or radicals. However, the structure of $U(BH_4)_4$, and its appropriate classification in the salt-forming or the non-salt-forming categories of metal hydroborates, are in doubt, thanks to contradictory published data.

The authors made a complete infrared analysis of $U(BH_4)_4$ samples synthesized by the Brown-Schlesinger method; also, a thermographic study of the samples.

It was concluded that the $U(BH_4)_4$ molecule is of "bridge" structure, which involves the presence of a substantially covalent U - B bond with participation of the "bridge" atoms of hydrogen. Further, it was shown that

USSR

VOLKOV, V. V., et al., Radiokhimiya, Vol XIII, No 3, 1971, pp 401-405

$U(BH_4)_4$ does not undergo any phase transformations in the temperature interval from --180 to 55°C. The interplanar distances which may characterize $U(BH_4)_4$ were also determined.

2/2

AP9053098

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR, Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5, pp 144-146

V. V. Volkov,
K. G. Myakischev, G. I. Bagryantsev

16 3 1 22

FUSSION DIAGRAMM OF THE SYSTEM ZIRCONIUM BOROHYDRYDE-DIOXANE

Mutual solubility in the system zirconium borohydryde-dioxane was studied by the low temperature differential thermal analysis method. It was established that this system is a simple eutectic. Eutectic point corresponds to the temperature −4°C and 40 mol. % of zirconium borohydryde.

1/1 1979 1846 18

Meteorology

Source: JPRS # 58025 19 Jan 73

Meteorology

WORLD METEOROLOGICAL CENTER

[Article by L. M. Miridonov: Moscow, Meteorologiya i Gidrologiya, [illegible] 11, 1972, pp 106-107]

On 29 May, the Director of the Antarctic Institute of Chile [illegible] Mario Pableti visited the USSR Hydrometeorological Center. He was [illegible] with the structure and problems of the Center and examined the [illegible].

A discussion with representatives of the Swedish-Finnish [illegible] Valmet, A. Krank and K. Vivekki was held at the USSR Hydrometeorological Center on 8 June. The guests were familiarized with the activity of the Center, and they, in turn, told about the product manufactured by the company and [illegible] by the meteorological services of Finland and Sweden.

On 12 June of this year, a meeting was held at the USSR Hydrometeorological Center with a representative of the Telefunken Company, Yu. [illegible]. [illegible] was familiarized with the communication system of the Center. Yu. [illegible] told about the equipment built by his company and its use for meteorological data gathering and processing.

From 12 to 16 June a meeting was held at the Hydrometeorological Center of the representatives of the meteorological services of the socialist countries on the development of synoptic and physical-statistical methods of [illegible] range forecasting of temperature, precipitation and wind. The meeting was participated in by the following scientists: N. Bagrov (USSR), M. [illegible] (Poland), G. Koppany (Hungary), Kh. Kubash (German Democratic Republic), [illegible] (USSR), V. Stablyuske (USSR), L. Rakheu (Romania) and Kh. Isvetkov ([illegible]). The results of the research work with respect to this topic were discussed, and a coordinated program for further studies was developed.

On 14 June, specialists from the Democratic Republic of Viet [illegible] Vu Kuang Khung, Nguen Thai Luan completed their apprenticeship at the USSR [illegible] meteorological Center.

Specialist of the meteorological service of the German Democratic Republic Doctor P. Vogler was at the USSR Hydrometeorological Center from [illegible] June. He was interested in the problems of calculating the vertical [illegible] and the amount of precipitation for the case of unstable stratification.

MYAKISHEV, N.

USSR UDC: 621.396.6.002(088.8)

MYAKISHEV, V. A., Omsk Radio Plant imeni A. S. Popov

"A Suspension Device for an Assembly Conveyer"

USSR Author's Certificate No 280590, filed 29 Apr 69, published 17 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V285 P)

Translation: A suspension device for an assembly conveyer is proposed which contains an L-shaped rod connected to a support link which accommodates the unit being transported along the assembly sections. To improve the operational reliability of the device, two rings are used as a connecting element. Between these rings is a bearing which is connected to a third ring carrying a bracket equipped with two half-rings connected to the support link by an auxiliary bearing and ring.

1/1

USSR

UDC: 666.764.32

IGNATOVA, T. S., BELYAKOVA, N. P., PERMIKINA, N. M., SEMKINA, N. V., MYAKISHEVA, N. A., and YEVDOKIMOVA, Z. U., Eastern Institute of Refractories

"Effect of Technological Factors on the Density and Microstructure of Corundum Ceramics Containing 1% Titanium Oxide"

Moscow, Ogneupory, No. 8, 70, pp 32-35

Abstract: This study demonstrates the dependence of the microstructure and the density of corundum ceramics on the method of grinding, the dispersity of the silica, the method of molding, and the annealing temperatures of the finished product. A higher dispersity, vibratory grinding, high annealing temperatures, and TiO_2 additions promote the formation of a macrocrystalline structure, which in turn is responsible for the greater heat resistance of the material. A higher dispersity of the silica increases the intensity of

USSR

IGNATOVA, T. S., et al, Ogneupory, No 8, 70, pp 32-35

crystallization at high temperatures and initiates recrystallization of corundum at a much lower annealing temperature. Vibratory grinding intensifies recrystallication and the formation of a macrocrystalline structure, which causes loosening of the body and decreases the density. It appears that the higher thermal resistance and lower strength of corundum parts with macrocrystalline structures are related to some increase in apparent porosity.

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--TRANSPORT OF AMALGAM IN MERCURY CELL ELECTROLYSIS -U-

AUTHOR-(02)-AGALTSOV, A.M., MYAKISHEVA, T.D.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,372
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--AMALGAM, MERCURY, METALLURGIC PATENT, CHEMICAL PATENT, ELECTROLYSIS, ELECTROLYTIC CELL, SURFACE TENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1446 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126977
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 025

CIRC ACCESSION NO--AA0126977

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE MOVEMENT OF AMALGAM ALONG THE SURFACE OF THE HG BY THE ACTION OF DIFFERENING SURFACE TENSION FORCES IN DIFFERENT STREAMS OF HG IS APPLIED FOR TRANSPORTING THE AMALGAM.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--RHEOENCEPHALOGRAPHY IN THE DIAGNOSIS OF BRAIN TUMORS -U-

AUTHOR-(04)-SHEFER, D.G., SKRYABIN, V.V., MYAKOTA, A.YE., SAKOVICH, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 5, PP 680-684
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, BRAIN, HYPERTENSION, INTRACRANIAL PRESSURE, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0234 STEP NO--UR/0246/70/070/005/0680/0684

CIRC ACCESSION NO--AP0117486

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117486

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF CLINICAL OBSERVATIONS OF 116 CASES WITH BRAIN TUMORS THE AUTHORS DISCUSS THECCHANGES OF REG DURING THE DIFFERENT STAGES OF THE HYPERTENSIVE SYNDROME. THE RESULTS OF SUCH STUDIES PERMIT TO CONCLUDE THAT THERE IS A CERTAIN CORRELATION BETWEEN THE CLINICAL STAGE OF INTRACTANIAL HYPERTENSION AND THE AMPLITUDE FREQUENCY CHARACTERISTICS IN THE REGISTERED CURVES. THE AUTHORS RECOMMENDED TO TAKE INTO CONSIDERATION THIS FACT IN A CLINICAL INTERPRETATION OF THE REG DATA, INASMUCH, AS THE FOCAL SYMPTOMS OF TUMORS MAY BE EXPRESSED ON THE BACKGROUND OF SUCH CHANGES OF THE REG WHICH IS CONDITIONED BY AN INCREASE OF THE INTRACRANIAL PRESSURE. FACILITY: KLINIKA NERVNYKH BOLEZNEY I NEYROKHIRURGII SVERDLOVSK MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

M

Acc. Nr. AP0048833 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR0460

90953b **Effect of mercury on the thermal decomposition of poly(vinyl chloride).** Myakov, V. N.; Troitskii, B. B. (USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 100-1 (Russ.). The effect of Hg on the kinetics of thermal dehydrochlorination of suspension poly(vinyl chloride) (I, mol. wt. 62,000) was investigated. The decomph. was carried out in sealed ampuls at 190-200 ± 0.5°/10^{-1}-10^{-2} mm. Photomicrographs showed that Hg markedly retarded the dehydrochlorination of I and autocatalyzed thermal degradation was not obsd. in the presence of Hg. At 200°, ≤0.3-0.5 mg/hr g Hg stabilizer was converted into Hg^{2+}. The stabilizing effect of Hg was attributed to its high effectiveness as a Cl_2 acceptor. DBJR

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REEL/FRAME
19800600

AA0051858

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

242273 TEST EQUIPMENT FOR MEASUREMENT OF AMPLITUDE AND PHASE FLUCTUATION containing HF generator modulator, IF generator and phase shifter. The measurement set contains HF phase detector and LF analyser. To eliminate the effect of moise in the test equipment the outlet of the generator is connected via phase shifter to the mixer and to the input of phase of amplitude modulator. The second input to modulator is associated with LF generator.
29.3.68 as 1228784/26-9. A.N.MYALIK et al.(11.9.69)
Bul 15/25.4.69. Class 21c. Int.Cl.G 01r.

AUTHORS: Myalik, A. N.; Pshenichnikov, S. M.; Umnov, A. F.

MT

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19820293

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--MAGNETO RESISTANCE IN THIN FILMS OF NICKEL PALLADIUM ALLOY SYSTEMS -U-

AUTHOR-(04)-ANNAYEV, R.G., ROZYEV, M.A., MYALIKGULYEV, G., YAZLIYEV, S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ. TEKH., KHIM. GEOL. NAUK 1970, (1), 101-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NICKEL ALLOY, PALLADIUM ALLOY, METAL FILM, MAGNETORESISTANCE, MAGNETIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0184 STEP NO--UR/0202/70/000/001/0101/0105

CIRC ACCESSION NO--AP0054980

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LONGITANCE WAS MEASURED IN THIN NI-PD FILMS OVER A WIDE RANGE OF THICKNESS AND COMPN. TO CONFIRM THE 1 PHASE NATURE OF THE FILMS. FILMS 600-1200 ANGSTROMS THICK CONTG. 0-80 AT. PERCENT PD WERE PREPD. BY THE METHODS DESCRIBED EARLIER (1968).

A STRONG EFFECT OF THE TRUE MAGNETIZATION WAS OBSD. FOR ALL OF THE FILMS EVEN AT ROOM TEMP. THE FILMS CONTG. SMALLER THAN OR EQUAL TO 40 AT. PERCENT PD ARE SINGLE PHASE.

UNCLASSIFIED

USSR

UDC 539.171.017

AZIMOV, S. A., MYALKOVSKIY, V. M., NURITDINOV, Kh., RASULKULOV, M. S., ABDULLAYEV, A. M., BEYSEMBAYEV, [redacted] U., GAVRILIN, Ye. V., TALIPOV, D. A., MULLAZHONOV, E. Zh., TILLAYEV, T., RAKHMANOV, Zh., UMEROV, R., ULIMAYEVA, F. A., KHEN, E., YULDASHBAYEV, T. S., Institute of Nuclear Physics of the Academy of Sciences Uzbek SSR

"Study of the Characteristics of High-Energy Interactions of Pions and Nucleons"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36, No. 8, Aug 72, pp 1626-1631

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude Station of the Physicotechnical Institute of the Academy of Sciences Uzbek SSR are reported. The station is 3200 m above sea level. The setup contains three series of wide-gap spark chambers, with effective areas of 2 m^2 placed above and below the target. The Cerenkov spectrometer with total absorption and an ionization calorimeter with an area of 10 m^2 were used to measure the primary energy E_0. Up to the present time experimental data obtained over 630 hours of operation of the device have been processed, with a high-voltage pulse being supplied to the electrodes of the spark chambers. Showers with an energy of >200 Gev generated in the target were selected for analysis. The following ratio was obtained for the number

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AZIMOV, S. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 8, Aug 72, pp 1626-1631

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$; this shows that the proportion of charged particles is ~34% of all nuclear active particles, thus making it possible to study pion-nuclear collisions by comparing the characteristics of the interaction of charged and neutral primary particles. A weak functional dependence between the inelasticity coefficient $\langle K_{\pi c} \rangle$ and the atomic number of the target nucleus and a strong functional dependence between this coefficient and the nature of the primary particles were obtained for interactions of hadron with $E_0 > 200$ Gev. $\langle n_s \rangle$ is almost a logarithmic function of E_0. The average multiplicity in the interaction of pions with neutrons in paraffin is identical within the experimental limit. A considerable azimuthal effect was observed for the angular distribution of secondary particles. The azimuthal effect has its greatest value for showers with n_s = 8-15, or a multiplicity close to average.

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UDC 539.171.017

USSR

ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T., MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALIPOV, T. A., TILLAYEV, T., UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles in the 10^{11} to 10^{12}-ev Energy Range"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2065-2068

Abstract: Experiments that were performed at the high-altitude test station (3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the experiments was to investigate the angle of arrival and the energy characteristics of interactions of pions and nucleons with light and heavy nuclei at 2×10^{11} to 2×10^{12} ev and the mechanism of generating muons at energies above 2×10^{12} ev. Equipment consisted of spark chambers, located above and below the target (paraffin wax, carbon, and iron), a Cerenkov spectrometer of full absorption, and an ionization calorimeter. This complex method of measurements was found convenient for use in various modes of operation. A detailed description of various parts of the installation and their disposition is given in the paper.

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USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2065-2068

Joint operation of ionizing calorimeters and spark chambers is normally difficult because of the need for high voltage on the calorimeter electrodes, combined with the time lag of the input pulse from the spark chambers, amounting to over 20 microseconds. This difficulty was avoided in the present experiments by storing pulses in memory cells, with the subsequent input of a high-voltage pulse of about 120 kv. Operation was controlled by a master-pulse, prior to which all parts of the equipment were kept inoperative.

Results of 200 hours of the joint operation of a Čerenkov spectrometer and ionizing calorimeter, with graphite used as the target, have been processed so far. For analysis, showers with energy above 1.5×10^{11} ev were selected, 130 of them having been observed. The ratio of charged to neutral nucleons were determined and, from it, the fraction of charged pions of the total nucleus-active stream of particles. The inelastic coefficient for the formation of π^0-mesons was computed from the experiments related to the interaction of neutral particles with nuclei of graphite.

It is concluded that the combination of ionizing calorimeter with Čerenkov spectrometer of full absorption for the simultaneous determination of energy of primary particles made it possible to determine the fraction of

2/3

USSR

ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 35, No 10, Oct 71, pp 2065-2068

energy supplied by the ionizing particles η, since a Čerenkov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is η = 0.25,

CSO: 1862-W

- END -

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AA0051760 MYAMLIN A.N UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

237933 MEMORY ELEMENT. One magnetic core (2) is inside the other (1). Through the centre are passing lines (3) and (4). In figure 2, I, is the current applied to line (3), while I2 is the current applied to line (4). Reading current (Isch) is applied to line (3) and the output signal (U sign) is outgoing from line (4).

During writing the sum of the two currents is applied, one is half amplitude Isiu and second is magnetizing current equal to ½ of the writing current (Izp/2). At the same time is applied magnetizing current to line (4) which is equal to (I2p/2). I1 = I sin + I2p/2. I2 = ± Izp/2. After writing one toroid will leave an inductance equal to 0, the other ± Br. When reading, the polarity of the output for "1" and "0" is of opposite sign.

23.1.68 as 1212368/18-24. A.N.MIAMLIN et alia. (18.7.69) Bul 9/20.2.69. Class 21a. Int.Cl.H 03k.

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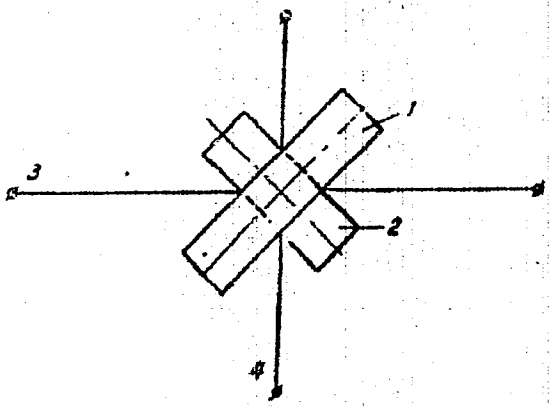
19820098

AA0051760

AUTHORS: Myamlin, A. N.; Sulkhanov, V. I.; Proskurin, M. I.



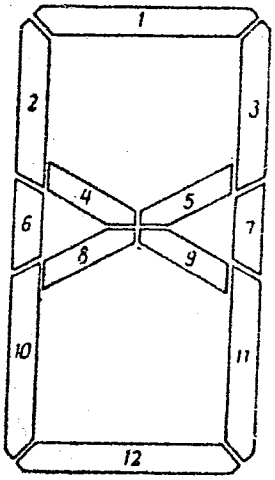
EO

2/2

19820099

AA0047095

Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482



243066 VISUAL LETTER OR DIGIT INDICATOR for the presentation of data with possibility of finding error and made up of top, lower and side segments arranged in a rectangle.

To facilitate the finding of an error when data is reduced, and to maintain the same figure or digit width, the side segments of the rectangle are each divided into three parts insulated from one another; four segments radiate from the centre of the indicator so that their outer ends adjoin the middle sections of the side segments.

9.10.67 as 1189504/26-25. V.I.ROSTOVSKYY & B.M.MYASIN. (18.9.69. Bul 16/5.5.69. Class 21f,42k. Int.Cl.H 01j, G 01l.

19790582

MYASIN, O.F.

Computers

ANTARCTIC EXPEDITION SHIP REACHES DESTINATION

Moscow TASS International Service in English 1810 GMT 31 Dec 71 L

[Text] Leningrad December 31 TASS--Diesel-electric motorship "Ob" which left Leningrad on November 9 for the Antarctic carrying members of the 17th Antarctic expedition has reached its destination, the ship radioed home. It has approached the shelf glacier Amery, in which area the explorers will set up camp.

The glacier attracts scientists by the opportunity to study the structure of this part of the Antarctic by the rocks which emerge on the surface. They will also conduct glaciological work, geophysical observations and gravimetry, mapping of the terrain. This program is carried out by the expeditions seasonal teams during the Antarctic summer.

From the glaciers the "Ob" will go to the Mirnyy observatory with expedition supplies and personnel replacements.

During the cruise in the "Ob" near the shores of Antarctica, expedition members will select a site for building an observatory on the coast of the Sea of Amundsen.

The 17th expedition's final group, the biggest throughout the whole period of Soviet research in the Antarctic and numbering more than 400 people, will go there in the incoming year of 1972.

REVIEW NOTES LACK OF ADEQUATE COMPUTER PROGRAMMING BOOKS

Moscow NOVYYE KNIGI ZA RUBEZHOM Series A in Russian No 11, Nov 71 pp 32-36 X

[Review of D. H. Stabley's book "Logical Programming With System/360" by candidate of technical sciences O. F. Myasin. A footnote to the review states that the book has been accepted for translation into Russian by the "Mir" publishing house.]

[Excerpt] The methodical and detailed nature of the discourse, the wealth of practical examples, and the large number of highly diverse exercises make Stabley's book indispensable for third-generation machine programming.

There are no such books in Russian. Considering the tremendous demand for a textbook of this type in connection with the introduction of a large number of domestically produced third-generation machines and the structurally similar ASVT series of machines, which will soon constitute the foundation of our country's computer capabilities, it is necessary that the extreme necessity of translating and publishing the Stabley book be recognized.

BRIEFS

SHIP LEAVED VLADIVOSTOK--The USSR Academy of Sciences scientific research ship "Dmitriy Mendeleyev" recently set off from Vladivostok on a long-distance voyage. This voyage will be devoted to the study of turbulence and other ocean phenomena. The scientific expedition is headed by Prof A.S. Monin, USSR Academy of Sciences Oceological Institute director and doctor of physico-mathematical sciences. [Moscow KOMSOMOL'SKAYA PRAVDA in Russian 26 Dec 71 p 4 L]

FBIS #7 11 Feb 72

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PASCHEN BACK EFFECT FOR THE MUONIUM ATOM -U-

AUTHOR-(05)-MINAYCHEV, YE.V., MYASISHCHEVA, G.G., OBUKHOV, YU.V., ROGANOV, V.S., SAVELYEV, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1586-1592

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LONGITUDINAL MAGNETIC FIELD, MAGNETIC FIELD INTENSITY, MAGNETIC POLARIZATION, MUON, SINGLE CRYSTAL PROPERTY, QUARTZ, CORUNDUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2236 STEP NO--UR/0056/70/058/005/1586/1592

CIRC ACCESSION NO--AP0127598

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0127598
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLARIZATIONOF MU PRIME POSITIVE MESONS AS A FUNCTION OF LONGITUDINAL MAGNETIC FIELD STRENGTH IS MEASURED BETWEEN 0 AND 3 KOE IN SINGLE CRYSTAL QUARTZ AND CORUNDUM. FOR QUARTZ THE EXPERIMENTAL DATA ARE FOUND TO BE IN GOOD AGREEMENT WITH THE THEORY OF MUONIUM DEPOLARIZATION. THE EXPERIMENTAL VALUE OF THE CRITICAL MAGNETIC FIELD STRENGTH FOR MUONIUM IN QUARTZ EQUALS WITHIN THE EXPERIMENTAL ERRORS THE VALUE OBTAINED IN VACUUM. THE POSSIBLITIES WHICH THE METHOD AFFORDS FOR MEASURING THE SIZE OF MUONIUM IN VARIOUS MEDIA ARE CONSIDERED.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 022

TITLE--EFFECT OF THE CRYSTAL LATTICE OF SILICON ON THE HYPERFINE SPLITTING ENERGY OF MUONIUM -U-

AUTHOR-(05)-ANDRIANOV, O.G., MINAYCHEV, YE.V., MYASISHCHEVA, G.G., OBUKHOV, YU.V., ROGANOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 6, PP 1896-1898

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL LATTICE, SILICON, SINGLE CRYSTAL, LONGITUDINAL MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1728 STEP NO--UR/0056/70/058/006/1896/1898

CIRC ACCESSION NO--AP0120440

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120440

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF MU E DECAY POLARIZATION ON LONGITUDINAL MAGNETIC FIELD STRENGTH IS MEASURED IN SILICON SINGLE CRYSTALS. THE HYPERFINE SPLITTING ENERGY OF THE MUONIUM ATOM IN THE CRYSTAL LATTICE DIFFERS FROM THE VACUUM VALUE AND CORRESPONDS TO A MUONUIM SIZE R EQUALS (9,719 PLUS OR MINUS 9,016) ANGSTROM.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 025

TITLE--STUDY OF THE EXCRETION OF PURINES AND URIC FROM URINE OF PATIENTS SUFFERING FROM LEUKEMIA WITH VARIOUS CONTENT OF COBAMIDE COMPOUNDS IN

AUTHOR-(05)-MYASISHCHEVA, N.V., SHEREMET, Z.I., LEVINA, G.O., LORIE, YU.I., RAUSHENBAKH, M.O.

COUNTRY OF INFO--USSR

SOURCE--PROBL GEMATOL PERELIV KROVI 15(1), 36-43. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEUKEMIA, URINE, ORGANIC ACID, PURINE, EXCRETION, VITAMIN, COBALT COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0248 STEP NO--UR/9080/70/015/001/0036/0043

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CIRC ACCESSION NO--AP0117500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TOTAL OF 24 PERSONS WERE EXAMINED. IN THE PATIENTS WITH INCREASED LEVEL OF B SUB12 IN THE BLOOD NOT ONLY AN INTENSIFIED EXCRETION IN URIC ACID WAS SEEN, BUT ALSO AN INTENSIFIED EXCRETION OF PURINES AND OF THEIR METHYLATED DERIVATIVES.

FACILITY: INST. EXP. CLIN. ONCOL., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 51

KRIVONOGOV, Yu. A. and MYASKOVSKIY, G. M.

"Optimizing a Combination of the Technical Means of Operative Control Systems"

Upravlyayushchiye sistemy i mashiny (Control Systems and Machines) No 2, 1973, pp 95-100 (from RZh--Matematika, No 1, 1974, Abstract No 1V551)

Translation: A method is considered for optimizing the structure and complex of technical means (CTM) of operative control systems for a specific production process in conformance with actual conditions of its operation, taking into account the operational reliability of the CTM and the operativity of the solution to the problems generated by their sources. Authors' abstract.

1/1

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 024

TITLE--ELECTRODEPOSITION OF IRON ALLOYS -U-

AUTHOR-(04)-VINITSKIY, A.G., KOVTUN, V.I., PUDA, V.A., MYASKOVSKIY, L.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,097
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, IRON COBALT ALLOY, MANGANESE ALLOY, ELECTROLYTE, ELECTRODEPOSITION, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1827 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132092

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 024

CIRC ACCESSION NO--AA0132092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN FE,CO,MN ALLOY IS PREPD. FROM AN ELECTROLYTE CONTG. FECL SUB2 100-150, COCL SUB2 50-700, AND MNCL SUB2 100-200 G-L. AT PH 0.8-1.6, C.D. 20-50 A-DM PRIME2, AND 30-60DEGREES.

FACILITY: KIROVOGRADSKIY INSTITUT SEL'SKOKHOZYAYSTVENNOGO MASHINOSTROYENIYA.

UNCLASSIFIED

USSR

UDC 577.891:663.19/14

PETIN, V. G. and MYASNIK, M. N., Scientific Research Institute of Medical Radiology, Academy of Medical Sciences USSR, Obnisk

"Analysis of Using Alpha-Particles for Suppressing Recovery of Bacterial Cells"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/ Feb 72, pp 85-91

Abstract: A detailed analysis is made of the seven "facts" constituting radiobiological evidence for the role of recovery processes in the radioresistance of bacterial cells. This system of evidence was based on a hypothesis that alpha irradiation suppresses reparative systems in cells. The concept was based on the correlation between recovery processes registered biochemically on the molecular level and the radiosensitivity of cells. A careful analysis of experimental data revealed that this evidence is either artificial, arising from methodological errors, or the result of insufficiently critical analyses. The original hypothesis about alpha-particles is proved incorrect. The authors mention that there is no literature to assess correctly the role of postradiation recovery in microorganisms' sensitivity to radiation with differing linear energy losses.

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UDC 666.113/117

USSR

KLIMENTOVA, YU. P., KIRICHENKO, L. F., ASLANOVA, M. S., MYASNIKOV, A. A., CHERTOV, V. M., VYSOTSKIY, Z. A., Institute of Physical Chemistry, imeni L. V. Pisarzhevskiy, Ukr. Academy of Sciences; and All-Union Scientific-Research Institute of Fiberglass and Fibers

"Effect of Hydrothermal Treatment on the Texture of Silicon Fibers"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 44, No 8, 1971, pp 1725-1730

Abstract: The texture of glass fibers strongly depends on their origin natural or basaltic glass. The texture of silicon glass is dealt with here, as it is affected by hydrothermal processing. A number of physical features are taken into account.

It is shown that with hydrothermal processing of fine-pore silicon fibers at 100-300°C, and autoclaving for 3-24 hours, increase in either of these factors will secure a substantial reduction in the size of micropores and in the specific surface of the fiber,

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KLIMENTOVA, YU. P., et al, Zhurnal Prikladnoy Khimii, Vol 44, No 8, 1971, pp 1725-1730

which means also that the volume of sorption space falls off. Hydrothermal processing at 200°C will produce a good number of ultrapores in silicon fibers, and these will be accessible to the water molecules, though not to those of benzene.

Precise data on textural characteristics of silicon fibers accompany the paper.

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Environmental and Ecological Problems

UDC 616-006

USSR

DOROGOKUPLYA, A. G., ADIL'GIREYEVA, L. KH., and MYASNIKOV, A. I., Institute of Clinical and Experimental Surgery, Ministry of Public Health, Kazakh SSR

"Effect of Smoke-Contaminated Air on the Bodies of White Rats Suffering A-Hypovitaminosis"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya, No 3, May/Jun 72, pp 57-60

Abstract: The relationship between vitamin A deficiency and the effects of chemical carcinogens was studied by subjecting rats to up to 1 year in a smoke chamber. Tissues of 25 rats fed a Sherman diet (vitamin A-deficient) and rats given a complete diet were inspected microscopically and histologically for the presence of 3,4-benzpyrene and for pathological changes. Such changes and accumulation of the carinogen were noted earlier in vitamin-deficient rats (within 60 days) than in control rats (100 days). Moreover 7 of 25 control rats survived up to 1 year while all vitamin-deficient rats died in 90 days. Though appearing earlier, the pathological changes in vitamin-deficient rats were comparable to those in control rats: Terminal conditions included adenoma and epithelial proliferation in the lungs, hepatitis, uncornified squamous cell carcinoma in the esophagus and forestomach, and ulcerous gastritis and epithelial proliferation in the stomach. Thus A-hypovitaminosis facilitates appearance of a cancerous condition in the presence of a carcinogen.

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UDC: 539.43

USSR

SHETULOV, D. I., MAGIDOV, M. B., MYASNIKOV, A. M., SHIBAROV, V. V., and SOKOLOV, L. D. , Gor'kiy

"Study of Hardening in the Process of Fatigue in Some Pure Metals"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 165-169

Abstract: Earlier research has shown that the capacity of metals to resist varying stresses is inversely related to their capacity to harden. Under static stress. The coefficient of hardening is determined by the slope of the stress-strain curve (hardening curve). The slope of the fatigue curve demonstrates the capacity of materials to resist varying stresses "better" or "worse". The value of the slope of the hardening curve varies inversely with the packing defect energy (γ), while the slope of the fatigue curve is a direct function of γ. Described here is an attempt to correlate both of thesecharacteristics. The metals involved in the study were Al, Cd, Zn, Cu, Fe, and Ti. The experimental results indicate that the inclinations of the fatigue curves to the X-axis correlate with the packing defect energy (γ), i.e., the higher the γ, the steeper the slope. The slope of the fatigue curves is related to the slope of the hardening curves, i.e., the flatter the slope of the fatigue curve, the steeper the hardening curve.

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USSR UDC. 621.372.853

PARSHIN, P. I., MYASNIKOV, G. G.

"A Device for Protecting a Magnetron From Breakdown"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 11, Apr 71, Author's Certificate No 298978, division H, filed 22 Sep 69, published 16 Mar 71, p 179

Translation: This Author's Certificate introduces a device for protecting a magnetron from breakdown. The unit contains a waveguide section, blocking relay, power supply and electrode. As a distinguishing feature of the patent, to increase the concentration of charged particles under the electrode, a dielectric diaphragm is mounted between the magnetron and the above-mentioned electrode.

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JPRS 60575
17 Jan 73

USSR: 537.12

ADSORPTION AND SEMICONDUCTOR DETECTORS OF FREE ATOMS AND RADICALS

[Article by Doctor of Chemical Sciences I.A. Myasnikov, Nauk SSSR, Russian, No 4, August 1972, pp 40-49]

MYASNIKOV, I. A.

Work on the investigation of the interaction of free atoms and radicals with the surface of a solid, namely the oxides of metals, is important in deciphering the mechanisms of many heterogeneous physicochemical processes which proceed with the participation of active particles on the gas-solid or liquid-solid interface.

Analysis of the available data shows that free atoms and radicals, upon impinging on the surface of an oxide, either recombine with one another or interact with the surface of the oxide, forming a chemisorbed layer or, finally, react chemically with the elements making up the oxide, leading to its destruction and the formation of volatile and nonvolatile products. In the region of positive temperatures the lifetime of physically adsorbed active particles is very small, whereas their chemisorption leads to the formation of rather stable surface compounds. Study of those compounds is of great interest, as they can arise only as a result of dissociative adsorption of molecules or a heterogeneous catalytic reaction which takes place on the oxide as on a catalyst and can influence the rate and direction of those processes.

To investigate regularities of the chemisorption of active particles and their surface states and reactivity, in the Physicochemical Institute imeni L.Ya. Karpov now experimental methods have been developed, methods connected with measurement of electrical conductivity of thin films (10^{-4} - 10^{-5} cm) of adsorbents, the electron work function, and the Hall emf, autography and methods of atomic (molecular) beams also have been used. With these methods, in the process of adsorption of atoms